

CME Legs Detected in Interplanetary Space?

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ISEE-3 and Ulysses plasma and magnetic field data have been used to study features in the trailing regions of interplanetary plasma clouds resulting from coronal mass ejections (CMEs). Approximately one quarter of those events contained periods ≥ 6 hours for which the interplanetary magnetic field was quiet and nearly radial ($|B_r|/B > 0.9$). Arguments are presented that this is a causal relation, rather than coincidence. In every case, the radial fields coincided with periods of declining solar wind speed. In some cases the radial-field periods overlapped periods with other CME signature, and in other cases, the radial fields followed immediately after the disappearance of those signatures. These quiet, radial fields are interpreted as signatures of the legs of the plasma cloud. It is also suggested that intervals with highly Alfvénic fluctuations following the quiet radial field intervals may be the interplanetary signatures of transient coronal holes at the site of the eruption on the Sun.